

## **REMARKS**

Claims 1-8, 10-15, 17-25, 27-28, 45-48, 50-55, 57-65, 67-76, and 78-84 remain in this application. Claims 16 and 56 have been canceled. Claims 9, 26, 29-44, 49, 66, 77, and 85-89 have been withdrawn as the result of an earlier restriction. In view of the examiner's earlier restriction requirement, that applicants retain the right to present claims 9, 26, 29-44, 49, 66, 77, and 85-89 in a divisional application.

### **I. SPECIFICATION**

The examiner objected to the specification stating that the "heat storage unit" has not been described in the specification. The examiner states that the applicants have only described a heat sink having a storage capacity.

The original application, including the specification and drawings showed a type of heat sink that absorbed heat from the thermal conduit system. The heat sink originally described and shown in the drawings was not a heat sink that relied on the dissipation of heat to another location such as the environment to manage the temperature of thermal components. In the first Office action, the examiner based rejections on art that showed a different type of heat sink, one that is typically used on electronic devices to dissipate heat to the environment. Thus, the applicants amended the phrase "heat sink" to "heat storage unit" to more clearly describe the action of absorbing heat and storing the heat for temperature management rather than dissipating heat to another location to manage temperature. The heat storage unit does not rely on heat dissipation to manage the temperature of the thermal components, but instead stores the heat absorbed from the thermal component. This is clearly what was described in the original specification and shown in the original drawings. Therefore, the new phrase "heat storage unit" accurately describes and is supported by what was in the originally-filed application. Additionally, the applicants have revised the specification above to further clarify how the heat storage unit operates.

### **II. DRAWINGS**

The examiner objected to the drawings under 37 C.F.R. 1.83(a) stating that the "heat storage unit" must be shown or the feature canceled from the claims.

The applicants repeat the discussion above regarding the rephrasing of "heat sink" to "heat storage unit". The applicants submit that only the phraseology has changed and no new matter has been added. Thus the original drawings show a heat storage unit as described in the claims.

### **III. CLAIM REJECTIONS – 35 U.S.C. § 112**

#### **A. Examiner's Statements**

The examiner rejected claims 1, 45, 50, 69, and 78 under 35 U.S.C. §112, first paragraph, as failing to comply with the enablement requirement. The examiner stated that the term “heat storage unit” has not been described in the specification.

The examiner rejected claim 16 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The examiner stated that the terms “mini-”, “micro-pump” have not been clearly defined in the specification.

#### **B. Law**

A claim may not be rejected solely because of the type of language used to define the subject matter for which patent protection is sought.<sup>1</sup> In reviewing a claim for compliance with 35 U.S.C. 112, second paragraph, the examiner must consider the claim as a whole to determine whether the claim apprises one of ordinary skill in the art of its scope and, therefore, serves the notice function required by 35 U.S.C. 112, second paragraph, by providing clear warning to others as to what constitutes infringement of the patent.<sup>2</sup> Breadth of a claim is not to be equated with indefiniteness.<sup>3</sup> If the claims, read in light of the specification, reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the statute [35 U.S.C. §112, second paragraph] demands no more.<sup>4</sup>

#### **C. Claims 1, 45, 50, 69, and 78**

The applicants repeat the discussion above regarding the rephrasing of “heat sink” to “heat storage unit”. The applicants submit that only the phraseology has changed and no new matter has been added. Thus the original drawings show a heat storage unit as described in the claims. Additionally, the applicants have revised the specification above to further clarify how the heat

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<sup>1</sup> *In re Swinehart*, 439 F.2d 210, 160 USPQ 226 (CCPA 1971).

<sup>2</sup> *See, e.g., Solomon v. Kimberly-Clark Corp.*, 216 F.3d 1372, 1379, 55 USPQ2d 1279, 1283 (Fed. Cir. 2000).

<sup>3</sup> *In re Miller*, 441 F.2d 689, 169 USPQ 597 (CCPA 1971).

<sup>4</sup> *Shatterproof Glass Corp. v. Libbey Owens Ford Co.*, 758 F.2d 613, 225 USPQ 634 (Fed. Cir. 1985); *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 USPQ 81 (Fed. Cir. 1986).

storage unit operates. The applicants therefore respectfully request the examiner to withdraw the rejection with respect to claims 1, 45, 50, 69, and 78.

**D. Claims 16 and 56**

Claims 16 and 56 require a pump selected from the group consisting of a mini-pump or a micro-pump. Although, the examiner stated that one of ordinary skill in the art would not be reasonably appraised of the scope of the invention, the terms “mini” and “micro” used in reference to pumps are in fact terms of art. Applicants attach as Appendix A, published articles and Internet product brochures showing industry use of the terms “mini” and “micro” in reference to pumps. Applicants respectfully submit that one of ordinary skill in the art would be reasonably appraised of the scope of the invention of claims 16 and 56 because “mini” and “micro” are standard industry terms with respect to pumps. Applicants therefore respectfully request that the examiner withdraw the rejection of claims 16 and 56.

**IV. CLAIM REJECTIONS – 35 U.S.C. § 102**

**A. Examiner’s Statements**

The examiner rejected claims 1, 3-8, 10-12, 15, 25, 27-28, 69-72, 74-76, 78-80, and 82-84 under 35 U.S.C. § 102(b) as being anticipated by Flores (U.S. Patent No. 5,701,751) [hereinafter Flores].

**B. Law**

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.<sup>5</sup> The identical invention must be shown in as complete detail as is contained in the ... claim.<sup>6</sup> To establish inherency, the extrinsic evidence “must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.”<sup>7</sup> Thus, the fact that a certain result or characteristic may occur or be present in the prior art is not sufficient to establish

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<sup>5</sup> *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

<sup>6</sup> *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

<sup>7</sup> *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).

inherency of that result or characteristic.<sup>8</sup> In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art.<sup>9</sup> In addition to disclosing every claim limitation, an anticipatory prior art reference must enable the practice of the invention and describe it sufficiently to have placed it in the possession of a person of ordinary skill in the field of the invention.<sup>10</sup>

**C. Claims 1, 3-8, 10-12, 15, 25, 27-28, 69-72, 74-76, 78-80, and 82-84**

Claims 1, 3-8, 10-12, 15, 25, 27-28, 69-72, 74-76, 78-80, and 82-84 are not anticipated by Flores because Flores does not disclose a heat storage unit. The examiner refers to item 50 in Figure 7A and 7B as a heat storage unit. However, Flores describes item 50 as a tank that holds water. This water is converted to steam as heat is absorbed from the heat pipes 43. However, instead of the steam remaining in the tank 50, a compressor that removes the steam at lower pressure and outputs the steam at high pressure to upper tank 100 where the high-pressure steam is stored and heat from the high-pressure steam is conducted from the steam to the borehole through the walls of the tank 100. Thus, the tank 50 in Flores manages the temperature of the thermal components by transferring the heat to another location, rather than storing the heat within the tank 50. Therefore, the applicants respectfully submit that Flores does not anticipate claims 1, 3-8, 10-12, 15, 25, 27-28, 69-72, 74-76, 78-80, and 82-84 because Flores does not disclose each of the claim limitations. The applicants therefore respectfully request that the examiner withdraw the rejection of claims 1, 3-8, 10-12, 15, 25, 27-28, 69-72, 74-76, 78-80, and 82-84.

**V. CLAIMS REJECTIONS – 35 U.S.C. § 103**

**A. Examiner's Statements**

The examiner rejected claims 13-14 under 35 U.S.C. §103(a) as being unpatentable over Flores in view of Boesen (U.S. Patent No. 4,375,157) [hereinafter Boesen]. The examiner rejected claim 16 under 35 U.S.C. § 103(a) as being unpatentable over Flores in view of de Kanter (U.S. Patent No. 4,407,136) [hereinafter Kanter] in view of Chrysler. The examiner rejected claims 16-18 under 35 U.S.C. § 103(a) as being unpatentable over Flores. The examiner rejected claims 17-

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<sup>8</sup> *In re Rijckaert*, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993).

<sup>9</sup> *Ex parte Levy*, 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990).

<sup>10</sup> *In re Paulsen*, 30 F.3d 1475, 1478-79 (Fed. Cir. 1994).

24 under 35 U.S.C. § 103(a) as being unpatentable over Flores in view of Drube et al. (U.S. Patent No. 6,799,429) [hereinafter Drube].

## **B. Law**

The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness. To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings.<sup>11</sup> Second, there must be a reasonable expectation of success.<sup>12</sup> Finally, the prior art reference, or references when combined, must teach or suggest all the claim limitations.<sup>13</sup> The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.<sup>14</sup>

There are three possible sources for a motivation to combine references: (1) the nature of the problem to be solved; (2) the teachings of the prior art; and (3) the knowledge of persons of ordinary skill in the art.<sup>15</sup> The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination.<sup>16</sup> Thus, a statement that modifications of the prior art to meet the claimed invention would have been “well within the ordinary skill of the art at the time the claimed invention was made” because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references.<sup>17</sup>

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<sup>11</sup> *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

<sup>12</sup> *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

<sup>13</sup> *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

<sup>14</sup> *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

<sup>15</sup> *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).

<sup>16</sup> *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); *see also In re Fritch*, 972 F.2d 1260, 23 USPQ2d 1780 (Fed. Cir. 1992).

<sup>17</sup> *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993); *see also In re Kotzab*, 217 F.3d 1365, 1371, 55 USPQ2d 1313, 1318 (Fed. Cir. 2000); *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

Also, if the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.<sup>18</sup> In addition, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.<sup>19</sup>

**C. Claims 13 and 14 Are Not Unpatentable Over Flores In View Of Boesen**

The applicants repeat the remarks made above for claim 1. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.<sup>20</sup> As claims 13 and 14 depend from claim 1, claims 13 and 14 are also nonobvious under 35 U.S.C. § 103(a). Therefore, the applicants request that the examiner withdraw the rejection with respect to claims 13 and 14 as well.

**D. Claim 16**

The applicants have canceled claim 16.

**E. Claims 16-18 Are Not Unpatentable Over Flores**

The applicants have canceled claim 16.

The applicants repeat the remarks made above for claim 1. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.<sup>21</sup> As claims 17 and 18 depend from claim 1, claims 17 and 18 are also nonobvious under 35 U.S.C. § 103(a). Therefore, the applicants request that the examiner withdraw the rejection with respect to claims 17 and 18 as well.

**F. Claims 17-24 Are Not Unpatentable Over Flores In View Of Drube**

The applicants repeat the remarks made above for claim 1. If an independent claim is nonobvious under 35 U.S.C. § 103, then any claim depending therefrom is nonobvious.<sup>22</sup> As claims 17-24 depend from claim 1, claims 17-24 are also nonobvious under 35 U.S.C. § 103(a).

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<sup>18</sup> *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

<sup>19</sup> *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959).

<sup>20</sup> *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

<sup>21</sup> *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

<sup>22</sup> *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988).

Therefore, the applicants request that the examiner withdraw the rejection with respect to claims 17-24 as well.

#### **VI. ALLOWABLE SUBJECT MATTER**

The Examiner stated that claims 2, 73, and 81 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The examiner also stated that claims 45-48, 50-65, and 67-68 would be allowable if rewritten or amended to overcome the rejection under 35 U.S.C. §112, 2<sup>nd</sup> paragraph.

Applicant respectfully submits that base claims 2, 73, and 81 are in condition for allowance as discussed above. Applicants also repeat the remarks made above regarding 35 U.S.C. §112 and submit that claims 45-48, 50-65, and 67-68 are in condition for allowance. Therefore, the applicants respectfully request that the examiner remove the objection with respect to claims 2, 73, and 81 and withdraw the rejection with respect to claims 45-48, 50-65, and 67-68.

#### **VII. STATEMENT REGARDING CLAIMS**

The applicants have argued the allowability of the claims by addressing the comments by the examiner in this paper as well as previously during the prosecution of this application. By doing so, the applicants are in no way limiting their ability to argue additional points of novelty regarding the independent claims or dependent claims at a later date.

#### **CONCLUSION**

The applicant respectfully requests reconsideration the pending claims and that a timely Notice of Allowance be issued in this case. If the examiner feels that a telephone conference would expedite the resolution of this case, he is respectfully requested to contact the undersigned.

In the course of the foregoing discussions, the applicant may have at times referred to claim limitations in shorthand fashion, or may have focused on a particular claim element. This discussion should not be interpreted to mean that the other limitations can be ignored or dismissed. The claims must be viewed as a whole, and each limitation of the claims must be considered when determining the patentability of the claims. There may also be other distinctions between the claims and the prior art that have yet to be raised, but that may be raised in the future.

Appl. No. 10/602,236

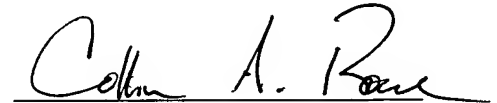
July 12, 2005

Reply to final Office action dated April 28, 2005

If any fees are inadvertently omitted or if any additional fees are required or have been overpaid, please appropriately charge or credit those fees to Conley Rose, P.C. Deposit Account Number 03-2769 (ref. 1391-34500) of Conley Rose, P.C., Houston, Texas.

Respectfully submitted,

CONLEY ROSE, P.C.

A handwritten signature in cursive script, reading "Collin A. Rose", written in black ink on a white background.

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